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DATAMATION

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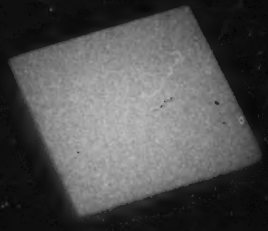
Can Unisys Juggle Open Systems, Too?



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VDTs Soup Up To Meet the PC Challenge

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BY NORM ALSTER
Financial institutions with a strong yen to spend helped the top 10 IS vendors in Japan grow 33%, or triple the revenue growth of chief IS suppliers in the U.S., in 1987. Minis were an increasingly strong market, but mainframes still top the market, and Fujitsu still leads the field. With financial data on:

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Cover photograph by Walter Wick

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1987 JESSE H. NEAL AWARD

Editorial

Open Systems: On to Square Two

So, is everybody clear about open systems now? What it all means—how vital it is to economic and technological progress for the global IS community, and how much money we'll all save when there's a free information trade between systems? No? Well, that's no surprise.

For a start, there are so many visions of an open future that nobody has a clear view of what open systems really means. A proliferation of standards groups is as bad as a proliferation of different standards. Unless there is a rapid move to unify and coordinate these groups, open systems simply will never happen, and we'll always be stuck at square one.

Second, there is a disturbing 'me too' vogue among IS vendors. They all want to convince customers that they actively support the trend, they all want to make sure they don't get trapped in a proprietary corner, and the large ones in particular want to influence developments. Remember, the movement is over a decade old, particularly in Europe, and what we are seeing now is mostly packaging and vendor power games. Open systems runs the risk of becoming yet another battleground for open warfare among the vendors. Back to square one again, right? Well, almost.

Third, there is a sad lack of perspective. No one wants to wind up locked into open systems. While all the world's corporations will benefit from easier systems integration, they still will want to choose their own technological and business solutions. That's how they differentiate and achieve a competitive edge. In Ralph Emmett Carlyle's "RISC and Unix: Signs of Transitional Times" (p. 38), user Bob Evans puts it succinctly: "What we don't want is some homogenizing effect whereby Unix as the lowest common denominator forces us to sacrifice the value added by proprietary systems."

Let's have open systems—properly coordinated and as free as possible from single-vendor influence. Let's use those standards effectively to cut costs and ease integration—a goal best achieved by including users in the process. But let's not forget that there also must be the freedom for designers and users alike to go their own way, to develop innovative proprietary systems for the jobs they do best. All open systems can ever do is to provide a mature base for easy implementation. Once that happens, we can forget about them. The real challenge now is to develop a mature understanding of the limitations. That's square two.

PAUL TATE
INTERNATIONAL EDITOR

DATAMATION

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Letters

So Fully Packed

I have been particularly interested by Marsha J. Fisher's article "Digital Paper Promises Cost, Storage Gains for Optical Media" (May 15, p. 32).

I discovered ICI Electronics "digital paper" product at CeBIT '88, in Hannover, West Germany. At the AIIM Show in Chicago the following month, during the ICI press conference, I asked the chief scientist from Creo a question that had been bugging me since Hannover. A standard (200 ISO) silver-halide color negative film contains 18 million pixels on a frame area of 24mm x 36mm (864mm²); the 24mm x 36mm area is the standard frame on a 35mm film, the most commonly used variety. (Color slide film, such as Kodachrome, has a much higher resolution, some 40 million pixels on the same 24mm x 36mm area.)

The ICI optical tape has a higher data storage density per square millimeter, and—in theory—is the first "electronic imaging" to have a better resolution power than conventional (silver halide) materials. I say "in theory" because, to my knowledge, as of today there is no hardware (CCDs) capable of recording so many pixels.

The Creo's chief scientist confirmed my calculation. Your readers might find this interesting.

JACQUES KAUFFMANN
President
IMAC International Inc.
Wilmette, Ill.

Guidance

Thank you for publishing the letter from GUIDE's President and Secretary (Apr. 15, p. 4). However, I notice that the address of GUIDE headquarters is given as New York. Unless the U.S. is engaged in a process of reverse colonization of the Old World, this is an error. The GUIDE headquarters is located in Ebikon, Lucerne, Switzerland.

GEORGE ANDERSON
Publications Manager
GUIDE
Wiltshire, U.K.

Congratulations

I congratulate Brad Schultz on what I felt to be a fine overview of the VM operating system (see "VM: The Crossroads of Operating Systems," July 15, p. 79). I have corroborating figures of my own to verify the extent of the "VM boom"—my book *VM/CMS Handbook* is selling in numbers normally associated with books on pcs like *How To Use Your Commodore 64* and *101 Uses for a Dead Apple.*

Dare I try for a plug? The 400-page book overviews all of VM and is available by calling 1-800-428-SAMS.

HOWARD FOSDICK
President
Midwest DB2 Users Group
Villa Park, Ill.

Kudos

Kudos to the authors of "Designing Usability in Systems" (May 15, p. 68). We really enjoyed reading one of the best articles we have seen about this exciting process. You correctly state that so called "high-tech" tools are not always needed to *create* more usable systems. However, the usability lab is the best tool ever devised for *evaluating* a product's "usability" or "friendliness."

DAVE JOHNSON
ED POINSETT
Usability Services International Inc.
Atlanta

Corrections

In the "Company Profiles" section of the DATAMATION 100 (June 15, p. 116) General Electric's telephone number was given incorrectly.

General Electric's correct telephone number is (203) 373-2211.

We apologize for the error.

For "The European 25" (see "Smashing the $50B Barrier," Aug. 1, international edition, p. 48-1), Groupe Bull inadvertently supplied incorrect revenue figures for its European business. The company's 1987 European IS revenue converts into $2,818,400,000. The company's ranking based on this revision is No. 5. Groupe Bull's European IS revenue accounts for 93.7% of its total IS revenue. The company's U.S. IS revenue accounts for 1% of its total IS revenue.

CALLING ALL USER GROUPS!

Please send information about your User Group so it can be included in DATAMATION's upcoming User Group Directory. If possible, please include address, phone number, number of members, names of officers, date of next meeting, statement of purpose, and a list of services provided. The address is:
249 W. 17th St.
New York, NY 10011
Attn.: Managing Editor

THE JAPAN 10

Market Close-up

YEN DRIVES GROWTH

Japan's currency-rich banks, utilities, and insurance companies spent big on IS. Minis roared, but mainframes grabbed the lion's share.

In 1986, IS vendors in Japan learned that a strong yen makes exporting tough. In 1987, they found that a strong yen also reflects and contributes to a wealthy, powerful Japan. With yen-rich financial institutions paying much of the user freight, the top 10 IS vendors in Japan grew 33% (triple the revenue growth of chief IS suppliers in the U.S.) during calendar year 1987.

Fujitsu Ltd. led the field again last year. Its overall IS revenue growth was 31.3% in dollars (12.7% in yen). In Japan, it sold nearly $7.2 billion worth of systems and software—that's 82% of its total worldwide IS sales of $8.7 billion.

Even though the growth chalked up by NEC Corp. lagged behind that of its four closest rivals, NEC managed to hold off Hitachi Ltd. and a resurgent IBM Japan Ltd. to retain second place. NEC's Japanese IS sales were $6.7 billion, some

Illustration by Darryl Ligasan

The DATAMATION Japan 10

1987 RANK	1986 RANK	COMPANY	OWNERSHIP	1987 JAPAN IS REV ($ MIL)	% CHG ($ U.S.)	% CHG (YEN)	1987 TOTAL IS REV ($ MIL)
1	1	Fujitsu Ltd.	Japan	$7,166.8	31.3	12.7	$8,740.0
2	2	NEC Corp.	Japan	6,748.6	31.7	13.0	8,230.5
3	4	Hitachi Ltd.	Japan	5,144.4	35.1	16.0	6,273.7
4	3	IBM Japan Ltd.	U.S.	5,140.6	34.5	15.4	50,485.7
5	5	Toshiba Corp.	Japan	2,684.3	35.6	16.3	3,441.3
6	6	Matsushita Elec. Indust. Co.	Japan	2,207.9	35.2	16.0	2,628.5
7	8	Mitsubishi Elec. Corp.	Japan	1,389.3	26.0	8.1	1,673.9
8	9	Nippon Univac Kaisha Ltd.	Japan/U.S.	1,294.6	31.3	12.7	1,294.6
9	7	Nippon Telegraph & Telephone Corp.	Japan	1,128.5	24.6	7.0	1,128.5
10	10	Oki Elec. Indust. Co. Ltd.	Japan	921.2	37.8	18.2	1,137.3

four fifths of its IS performance worldwide.

Following a dismal 1986, with declines in both profits and revenues, IBM Japan parlayed strong export and software sales into a 34.5% revenue expansion in dollars (15.4% in yen).

Last year's best growth, however, was in currency-proof exports such as laser printers and facsimile machines. Although Canon Inc.'s high 70% export ratio kept it from breaking into the ranks of the Japanese Top 10, it exhibited stellar increases, with worldwide IS sales climbing 68% to $1.7 billion.

Why a Strong Currency Helps Industry

The surge in Japan's IS industry comes both in spite of—and as a result of—the stronger yen. To some extent, the industry comeback is also a tribute to Japanese resourcefulness. With a strong yen making domestic manufacturing more expensive and exports less competitive, the Japanese moved swiftly and decisively to neutralize these disadvantages by importing more components, moving production offshore, gobbling up devalued foreign assets, and doggedly attacking internal inefficiencies.

In a larger sense, 1987's impressive performance reflects the inherent advantages of a strong currency. After all, the yen is strong because Japan is strong. The currency has appreciated 16% against the U.S. dollar from 1986 to 1987 because it is hard to come by. With huge trade surpluses against major trading partners, the Japanese have been able to stockpile yen as other countries bleed their currencies to pay for Japanese imports. The result is that anyone who owns yen has seen his or her assets appreciate along with the currency.

A case in point is Japan's banks. Because their yen-dominated assets have ballooned in value, seven Japanese banks now rank among the world's 10 richest. With this windfall, Japan's banks have expanded aggressively both at home and abroad.

To manage their ever more complex operations, Japanese banks have implemented so-called third generation on-line systems that integrate functions such as currency trading, international funds transfer, account management, and securities trading. Takehito Inoue, general manager of NEC's electronic data processing product planning division, says the financial industry was NEC's most active customer sector in 1987. IBM Japan, Hitachi, and Nippon Univac Kaisha Ltd. also say that purchases by banks, insurance firms, and other financial institutions contributed substantially to their 1987 performances.

The yen's strength helped IS vendors in other ways. Japanese manufacturers, intent on achieving productivity gains to offset higher production costs, increased their capital spending on information systems.

Spending on office computers was especially strong, because Japanese firms reckon there is great productivity leverage in automating offices. Only 1% of Japanese office workers use computers, according to Peter Wolff, vp and associate director of Far East research for Prudential-Bache Securities in Tokyo. The potential for expansion in this area is substantial.

Industries that are dependent on natural resources found that fewer yen bought more raw materials. Japanese utilities, beneficiaries of lighter energy bills, have been dramatically expanding their IS, says Reto Braun, president of the Asia Pacific division of Unisys Corp.

Finally, the appreciation of the yen puts a bulge in the consumer's wallet, and, with the government's encouragement, the Japanese consumer has been uncharacteristically profligate. Japanese gross national product grew by 4.9% (year ending March 31, 1988), up from the stunted 2.6% of 1986.

Mainframes Still Kings of the Jungle

Mainframes still top the list of Japanese IS expenditures. They account for roughly two thirds of all processor sales, according to the Japanese Ministry of International Trade and Industry (MITI). In 1987, mainframes rang up ¥1.2 trillion ($8.3 billion) in sales, up 19.1% from 1986. "Mainframe growth has slowed in the rest of the world. But not in Japan," Unisys's Braun notes.

Pcs, by contrast, play a far smaller and less vigorous role. Their sales, hurt by a plunge in exports to the U.S., grew by just 2.3% of a total of ¥380 billion ($2.63 billion). More promising were sales of "office systems," which are generally synonymous with minicomputers. Although they are still not a major market factor, minicomputers are being used more widely as departmental processors in Japanese offices and, according to MITI data, their sales rose by 21.3% to a total of ¥183.9 billion ($1.27 billion).

Fierce price-cutting in both hard and floppy disks curtailed growth in storage equipment. Although unit volumes increased by a robust 24%, unit prices declined by 13.1%, yielding an overall gain of 8.4% in the value of storage equipment production. Printer prices were much steadier, allowing an 18% advance in the value of production. Display equipment sales flicked along at a dull 2.3% rate of growth.

The abiding strength of mainframes

Table Source: DATAMATION

% CHG ($ U.S.)	1987 TOT REV ($ MIL)	JAPAN IS REV AS % OF TOT REV	IS REV AS % OF TOT REV	NET INCOME ($ MIL)	1987 TOTAL EMPLS	FISCAL YEAR END
32.9	$13,103.2	82	66.7	171.0	89,293	March
30.1	18,236.8	82	45.1	208.0	101,227	March
32.7	33,070.6	82	19.0	734.5	161,325	March
5.9	54,217.0	10	93.1	5,258.0	389,384	Dec.
32.1	23,829.0	78	14.4	293.6	124,000	March
33.3	31,906.1	84	8.2	1,010.7	132,851	Nov.
24.4	14,947.2	83	11.2	131.4	70,936	March
31.3	1,294.6	100	100.0	20.1	4,410	March
24.7	1,128.5	100	3.0	1,332.2	298,000	March
29.1	1,137.3	81	35.6	31.4	18,328	March

and relative unimportance of pcs reflect a broader reality of the Japanese IS market. It is, in many ways, a time-delayed snapshot of the U.S. market five or six years ago. Many of the same forces that have recently reshaped the U.S. computer industry are now at work in Japan, but in a more nascent state.

Pcs are just emerging. Minicomputers are coming on strong, offloading mainframe applications. There is an increased recognition of software as the key to competitive differentiation. Other trends that have begun to work their way through the Japanese market include heightened demand for systems integration, keen interest in Unix as an emerging standard, and the quickening pace of office automation.

All of the major IS vendors in Japan have made some attempt to align themselves with these trends. Hitachi has been increasing the number of engineers in software development, observes George Hersh, vp of equity research at Daiwa Securities America. IBM Japan is expanding its systems integration business. Mitsubishi Bank, for example, selected IBM Japan as the systems integrator for its ambitious third-generation computer network.

For its part, NEC is building a desktop-to-mainframe Unix capability and recognizes "a great need for software improvements," according to Inoue. The corporation sees a need for greater ease-of-use and for dramatic improvements in applications development and overall programmer productivity.

Even though NEC rates No. 2 among the Japan 10, it will have to do something to recover momentum. While its 31.7% dollar-revenue growth is nothing to sneer at, it is less than the next four companies on the Top 10 list: No. 3 Hitachi's dollar-revenue growth is 35.1%; No. 4 IBM Japan's is 34.5%; No. 5 Toshiba Corp.'s is 35.6%; and No. 6 Matsushita Electric Industrial Co.'s is 35.2%. NEC complains that exports were hurt by the strong yen. Its peripherals business also fell prey to pricing pressures, managing only slight improvement.

Wallets Sealed 'Til Christmas

Moreover, the company, traditionally strong in the middle of the mainframe market, suffered as customers awaited the December 1987 introduction of its new System 3300 processor. The other end of its product line also floundered as NEC-compatible pc makers flooded the Japanese market with low-priced models. The fact that NEC is the only leading Japanese mainframe vendor to eschew the copycat strategy of IBM-compatibility did not dissuade Seiko Epson, for example, from coming to market with clones of NEC's popular 9801 line of pcs.

Archrival Fujitsu, meanwhile, saw its own copycat strategy upheld in last year's controversial ruling by a specially appointed two-man panel approved by the American Arbitration Association. The panel, retained by IBM and Fujitsu for binding arbitration of IBM's claim that Fujitsu's mainframe software illegally borrows from its own, surprised most analysts by ruling that Fujitsu will purchase a paid-up license for over 900 IBM programs. The amount and terms of payment have not yet been announced. Although IBM and Fujitsu are not allowed to comment on the decision, the sound of gnashing teeth in Armonk is nonetheless audible even in Tokyo.

Fujitsu, on the other hand, is quite pleased. In the words of Pru-Bache's Wolff, Fujitsu's mainframe business "came on like gangbusters" after the ruling. Relieved Fujitsu customers concluded that there was no longer reason to question Fujitsu's ability to maintain IBM compatibility, and loosened their purse strings. So, with the help of a strong finishing kick, Fujitsu's mainframe sales grew by 15% in the company's fiscal year (ended March 31, 1988). One note of caution, however: recent intellectual property decisions in the U.S. have attached unprecented value to patents and copyrights. Some industry insiders believe the AAA panel cannot ignore these precedents in its decision on compensation. Fujitsu, they contend, may yet be slapped with a bill that approaches, or even exceeds, $1 billion.

Meanwhile, Fujitsu can savor the new life in its mainframe business, along with other aspects of its performance in 1987. It benefited from the small boom in office automation in two ways. First, its microcomputer sales, even though a relatively insignificant part of the business, climbed by 17% in its fiscal year. Second, and more important, Fujitsu sold nearly

Leading Japanese-Owned Computer Companies

	COMPANY	WORLDWIDE IS REV ($ MIL)	% CHG ($ U.S.)	% CHG (YEN)
1	Fujitsu Ltd.	$8,740.0	32.9	14.1
2	NEC Corp.	8,230.5	30.1	11.7
3	Hitachi Ltd.	6,273.7	32.7	13.9
4	Toshiba Corp.	3,441.4	32.1	13.4
5	Matsushita Elec. Indust. Co.	2,628.5	33.3	14.4
6	Mitsubishi Elec. Corp.	1,673.9	24.4	6.8
7	Canon Inc.	1,673.4	68.3	44.5
8	Nippon Univac Kaisha Ltd.	1,294.6	31.3	12.7
9	Ricoh Co. Ltd.	1,275.7	36.6	17.2
10	Seiko Epson Corp.	1,198.4	15.7	-0.7

Table Source: DATAMATION

THE JAPAN 10

50,000 of its "small business" computers, chiefly minis.

The ruling did little to slow IBM Japan in 1987. After a disappointing 1986, in which the company's sales dropped 2% in yen, the giant rode flourishing software sales to double-digit growth performance in 1987. Big Blue's IS sales in Japan rose to ¥743.4 billion ($5.14 billion).

IBM Pushes Integration, PS/2s

Some believe that IBM is poised for further gains, chiefly because it may be ready to make its move in pcs just as the domestic Japanese market begins to take off. While IBM is currently an also-ran in pcs (trailing NEC, Fujitsu, and Toshiba), Wolff expects the PS/2, with its improved *kanji* (pictographic characters of the Japanese language) capabilities, to gain market share for IBM.

Pcs were a sore spot for most Japanese IS vendors last year. Seven of Japan's 10 leading pc vendors suffered declines in worldwide pc revenues, according to San Jose-based market research firm, Dataquest Inc. Matsushita, Mitsubishi, Sharp, and others suffered from the appreciation of the yen and from the U.S. imposition of a 100% tariff on pc imports—retribution for Japan's alleged violations of the bilateral semiconductor trade agreement. Only NEC (strong at home), Epson, and Toshiba managed to grow in pc revenues last year, according to Dataquest.

Sales in Japan Spur IBM

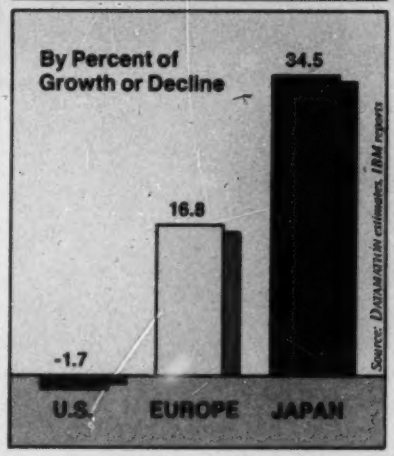

Chart by Catherine Francis

Toshiba's success last year is especially instructive. Like Fujitsu, it is a company that appears to have escaped the worst-feared consequences of its actions. With its worldwide IS sales growing 32.1% to $3.4 billion in 1987, Toshiba thrived despite its sale of vital submarine technology to the USSR. The company's success is perhaps the best evidence to date of how the U.S. computer industry and industrial policy are hostages to Japan's sovereignty in semiconductor memories. With DRAM-dependent U.S. customers bearing a forgive-and-forget message to Washington, Toshiba has thus far escaped serious sanctions.

Laptops Leave Toshiba Sitting Pretty

Toshiba has moved swiftly to transfer production of its hot-selling laptops to the U.S., thereby sidestepping the punitive tariffs. Yuji Wakayame, a Toshiba spokesman in Tokyo, says the company currently produces 10,000 laptops a month in the U.S., and adds that U.S.

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sales represent 40% of all Toshiba laptop sales. This year, the company's laptop sales in Japan should also increase.

With No. 7 Mitsubishi Electric Corp. and No. 9 Nippon Telegraph and Telephone Corp. chalking up relatively unspectacular revenue gains (8% and 7% in yen, respectively), the most compelling stories among the second tier of IS vendors in Japan belong to Nippon Univac, Matsushita, Canon, and Ricoh Co. Ltd. No. 8 Nippon Univac, which moved up from No. 9 in last year's rankings, benefited from the same mainframe buying surge that lifted Fujitsu, NEC, Hitachi, and IBM Japan. The company may have realized further benefits from its merger toward the end of the year with the Japanese subsidiary of Burroughs. (The new entity is called Nihon Unisys.)

Nippon Univac saw strength in its new midsize Swift 2200/200 machines and its high-end 1100/90 mainframes. Securities firms, utilities, and airlines were all active buyers. With the addition of Burroughs revenues, Nihon Unisys began 1988 with a broadened base of roughly ¥260 billion ($1.8 billion) and should move up on next year's Top 10. No. 10 Oki Electric Industry Co. Ltd., along with Matsushita, Canon, and Ricoh, showed double-digit revenue growth on the strength of participation in flourishing laser printer and/or facsimile markets.

Fastest Growers In Japan

JAPAN 10 RANK	COMPANY	% CHG (YEN)	JAPAN IS REV ($ MIL)
10	Oki	18.2	$921.2
5	Toshiba	16.3	2,684.3
6	Matsushita	16.0	2,207.9
3	Hitachi	16.0	5,144.4
4	IBM Japan	15.4	5,140.6

Matsushita and Canon are classic examples of strategic refocusing by Japan's consumer giants. Matsushita (along with Sony, a rising force in the Japanese workstation market) has recognized that Japan can no longer expect to be the low-cost producer in the price-sensitive sector of consumer electronics. Matsushita is therefore anxious to expand into industrial and office applications. With products such as personal copiers, personal computers, printers, and facsimiles, Matsushita is actually pioneering a sort of transitional or intermediate market: the home office.

Canon's transition is more complete. It would, in fact, be hard to find a more classic case of diversification based on core technology. Canon has leveraged its optical expertise earned in cameras into three promising optics-intensive new businesses: laser printers, facsimile, and semiconductor production equipment. Ricoh also rode the boom in facsimile and laser printers to an overall 36.6% rise in worldwide IS sales, to nearly $1.3 billion—not quite enough to earn a spot on the Top 10, but watch out for both Canon and Ricoh in 1989. ■

BY NORM ALSTER

Norm Alster is a freelance writer based in Cambridge, Mass. He frequently covers systems and electronics developments in the Far East.

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A European IS Culture for the 1990s

European corporations increasingly are concentrating on using IS in applications that improve both customer service and their own competitive positions, and that increase management effectiveness. But the responsibility for IS development is being spread more widely across senior executives, line managers, and IS specialists—each with their own priorities and levels of understanding. A partnership between these management sectors is vital to get the best out of technology in the future.

BY ROGER TOMLIN

If Europe's information systems departments are to get the most out of technology during the 1990s, they will need to target strategic applications, create a partnership between IS professionals and the different layers of corporate management, and avoid quantum leaps into the unknown. These are the central conclusions of a survey of 300 IS executives in major European corporations across the continent that was completed earlier this year on behalf of the Amdahl Executive Institute in the U.K.

The survey provides strong evidence that the business focus of IS developments in Europe is rapidly moving away from the back-room, cost-saving applications that have characterized traditional dp operations. IS is now mainly focused on adding value where the strategic competitive battle is won and lost.

One of the key obstacles to the creation of these strategic applications is that the purchasing and development responsibilities for IS systems are increasingly—and dangerously—being split three ways among the management of European corporations. Those responsibilities are now divided among the following three groups:

- senior corporate executives who are taking charge of the strategic IS direction, but who often have an inadequate understanding of the true possibilities and limitations of information technology;
- line managers who are being given control of user-led IS projects, without having the required technical know-how or experience to cope effectively;
- IS managers who remain responsible for providing the necessary technical infrastructure and services, yet who generally do not have the authority and expertise to participate productively in the business planning and decision-making processes that shape the corporate IS strategy.

What is needed now is a coordinated set of management policies and actions designed to create a corporate IS culture that ensures everyone involved works toward common goals. Given the growing strategic value of IS, the ability to create such a culture will be a key factor in deciding which companies will be tomorrow's business winners.

View of the Benefits of IS Is Changing

The foundation for this new IS culture is a clear understanding of where the real benefits from IS will be gained in the years to come. The chart called "Changing Focus of IS Benefits" compares what surveyed executives believe to have been the areas of most significant benefit over previous years with what they expect them to be in the next three years.

The most important changes between the rankings in the past and in the future are found in those activities most critical to the overall corporate mission: better service to customers, improving competitive position, increasing managerial effectiveness, and enhancing product quality.

These factors are beginning to change the way companies operate in Europe entirely. For example, John Whitmarsh, computer and warehouse director at U.K. mail order company Grattan plc, Bradford, England, comments that "information technology is now a

critical part of the business. Virtually every area is touched and almost everyone in the business uses a terminal in some form. At this stage, information technology is not just doing the old jobs better. It is doing entirely new jobs."

Activities with a more internal, cost-saving focus are still regarded as important, but they are becoming increasingly less urgent compared with more strategic applications. This does not mean cost-containment applications are becoming irrelevant, but it does indicate that most of the benefits have been squeezed from them and more strategic developments are taking center stage.

The chart "Future Priorities in IS Development" illustrates what this shift in benefit focus means (see p. 48-18). The most relevant developments integrate a variety of old and new systems via telecommunications links. For example, Alan Jacobs, information processing department director of J. Sainsbury plc, London, the largest U.K. supermarket chain, says that the creation of an integrated environment in which different systems talk to each other has enabled his company to be managed in a new mode, with the business driven firmly from the center: "We are now able to spread our wings and not worry about the mechanics of information flow."

One major new application area is the establishment of IS-based trading links between organizations, such as electronic data interchange (EDI). This is particularly important for European corporations as the European Commission strives to create a single market in Europe, with common customs, technical, and trading procedures, by 1992.

As one senior IS executive in a European retail chain points out, "We are getting to see information technology as a competitive weapon in forging interfaces with customers and trading partners. We see that if we get terminals into our customers and suppliers, it becomes much easier for them to order from our company and to ask us for advice on how to keep their business running. There is nothing like a successful computer link to make people dependent on the company which supports that service."

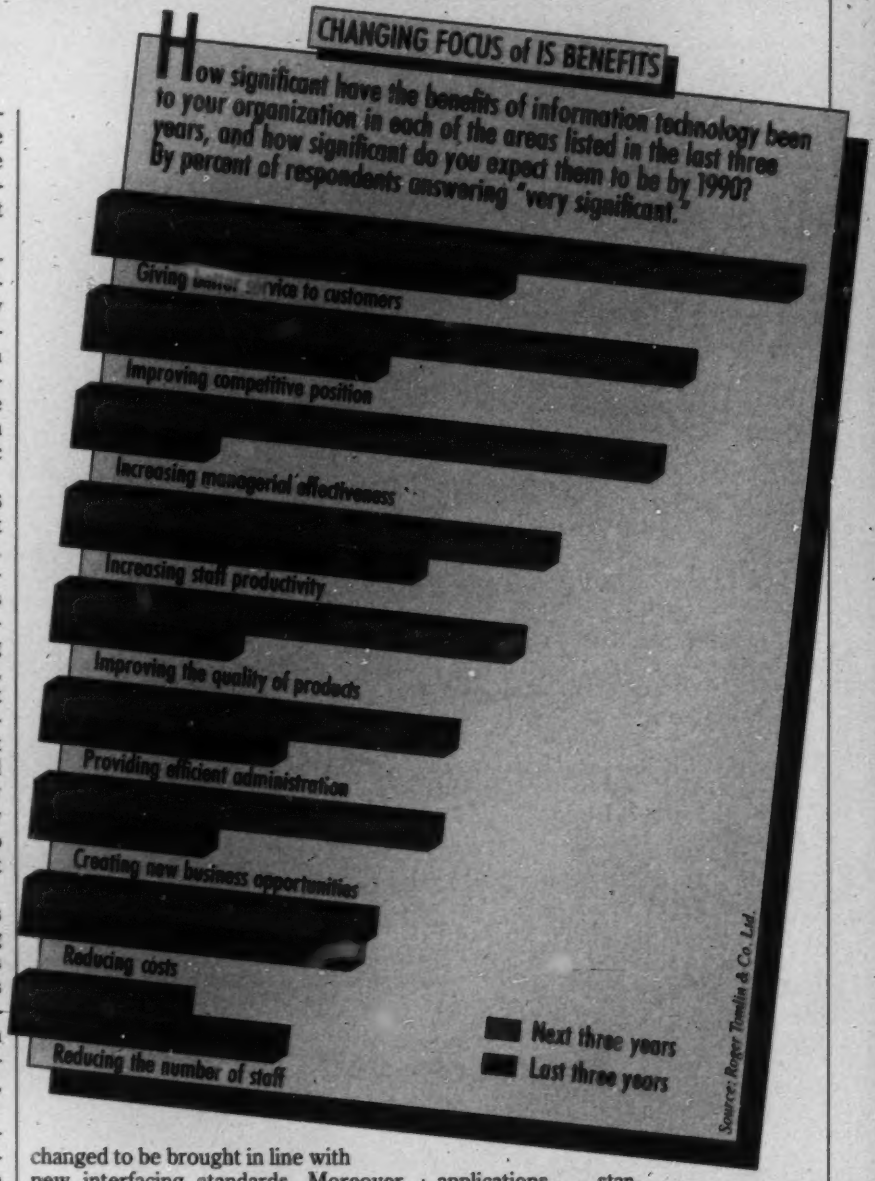
Concern Over Replacing Outdated Systems

A dark cloud on the integrated systems horizon is the fact that over half of the people questioned in the study say replacing outdated systems is a key future priority. Many older systems are unsuitable for the modern distributed network. Some systems may have to be changed to be brought in line with new interfacing standards. Moreover, the rapid pace of information technology innovation means that systems can become obsolete very quickly.

Frequently, there has been a lack of foresight in management planning. One large European service company was forced to throw out all its computers in 1981 because of "neglect and mismanagement in the 1970s," according to its current MIS director. He has, however, found a silver lining: "Millions of pounds later, it is proving to be a considerable competitive advantage to have none of our systems pre-date 1982."

The problem of obsolete systems is just one aspect of the complex demands on management and IS skills created by the trend toward integrated systems. The mixing of technologies, suppliers, applications, standards, hardware, software, telecom facilities, network architectures, and interorganizational and multinational systems could prove to be the recipe for disaster in many companies. It is this inherent complexity that is exacerbated by splitting IS responsibilities between corporate executives, line managers, and IS professionals.

"Sources of IS Initiatives" (see p. 48-18) shows how these responsibilities are now being distributed among different parts of European organizations. Generally, IS executives welcome the greater emphasis on user-led projects. They feel that a commitment from the actual user and line manager in charge of the relevant business areas is essential to the success of a system.


CHANGING FOCUS of IS BENEFITS
How significant have the benefits of information technology been to your organization in each of the areas listed in the last three years, and how significant do you expect them to be by 1990?
By percent of respondents answering "very significant."
Giving better service to customers
Improving competitive position
Increasing managerial effectiveness
Increasing staff productivity
Improving the quality of products
Providing efficient administration
Creating new business opportunities
Reducing costs
Reducing the number of staff
Next three years
Last three years
Source: Roger Tomlin & Co. Ltd.

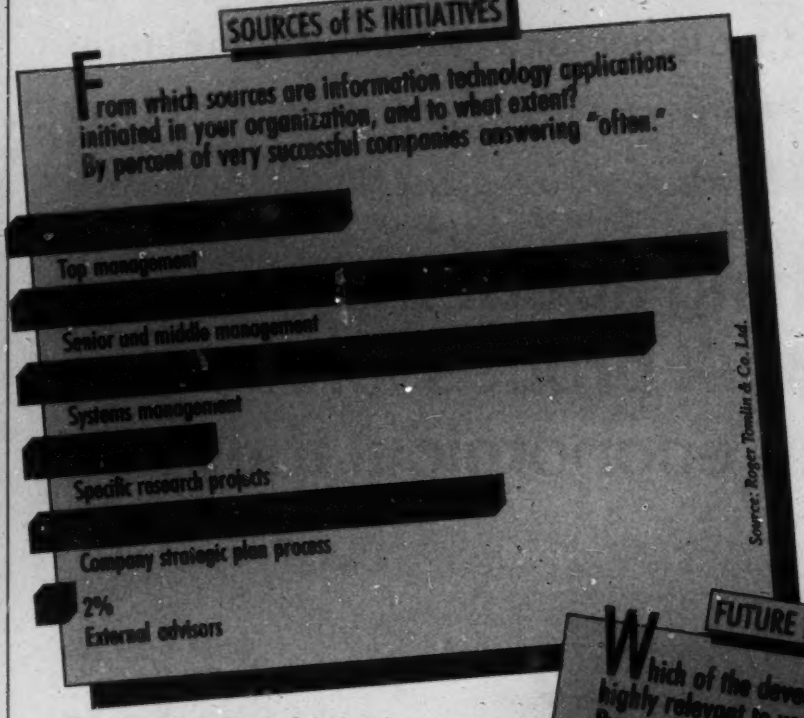
Charts by Paul Grange

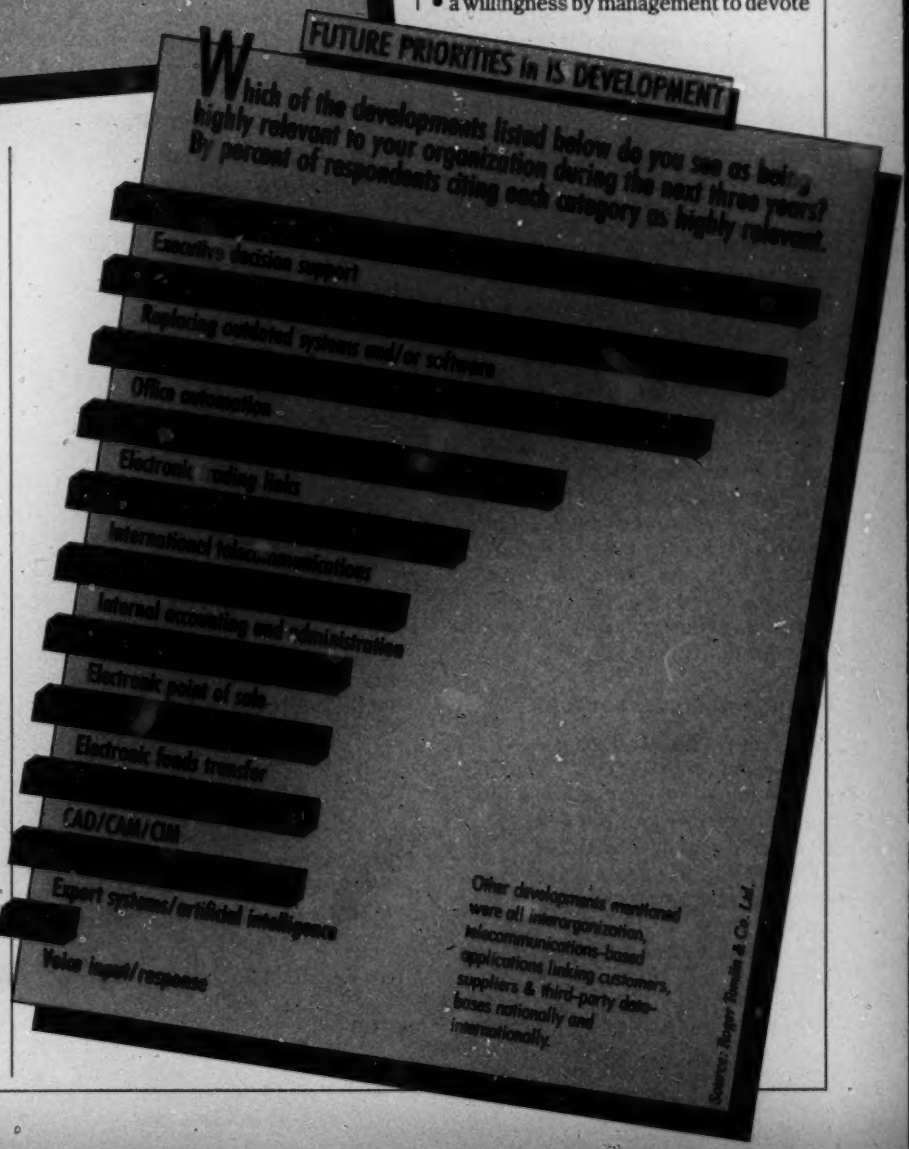
European IS Culture for the 1990s

"Very successful" users were therefore taken as the baseline for what all companies should achieve. The fact that only 31% of the companies surveyed fell into this category shows that the majority of companies in Europe still have a lot of work to do.

A clear picture emerges of the characteristics that distinguish the "very successful" user from the rest:

- a perception by top management of IS as a key to business success, with a good understanding of what it can contribute to the company's progress;
- a positive search for increasing IS applications, without resistance from management or staff;
- a willingness to be innovative and to take risks; and
- a willingness by management to devote


SOURCES of IS INITIATIVES
From which sources are information technology applications initiated in your organization, and to what extent? By percent of very successful companies answering "often."
Top management
Senior and middle management
Systems management
Specific research projects
Company strategic plan process
2%
External advisors
Source: Roger Towlin & Co. Ltd.

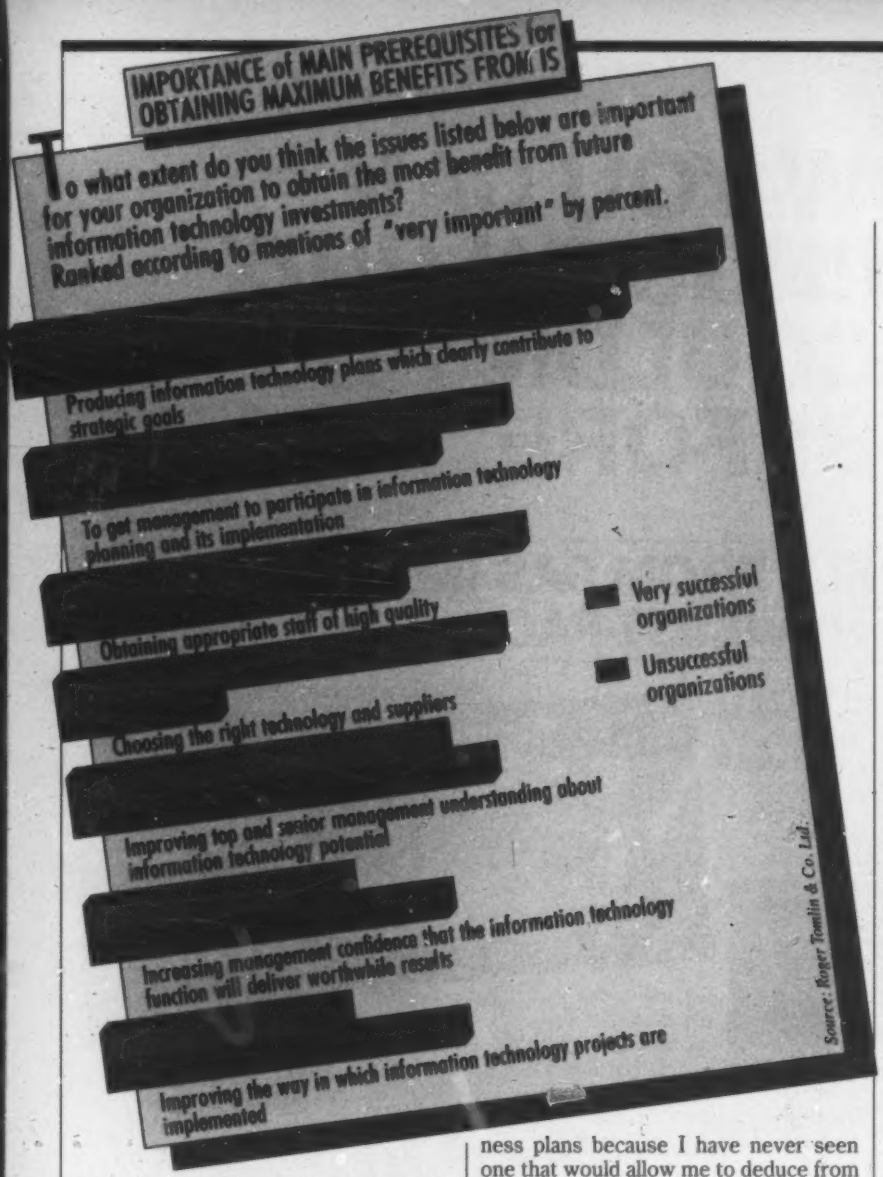

FUTURE PRIORITIES in IS DEVELOPMENT
Which of the developments listed below do you see as being highly relevant to your organization during the next three years? By percent of respondents citing each category as highly relevant.
Executive decision support
Replacing outdated systems and/or software
Office automation
Electronic trading links
International telecommunications
Internal accounting and administration
Electronic point of sale
Electronic funds transfer
CAD/CAM/CIM
Expert systems/artificial intelligence
Voice input/response
Other developments mentioned were all interorganization, telecommunications-based applications linking customers, suppliers & third-party databases nationally and internationally.
Source: Roger Towlin & Co. Ltd.

On the other hand, Sainsbury's Jacobs, like many of his colleagues, fears that inadequate technical understanding among users could be a major problem. "I am afraid," says Jacobs, "that line managers in charge of IS projects will make the same mistakes we did 10 years ago." Another European IS exec adds that his boss is "extremely supportive of computing developments but is absolutely terrified of [the system] himself."

A Two-Way Street of Misunderstanding

The lack of understanding goes both ways. In building effective partnerships with managers and users, there is a general acceptance that IS professionals must come to grips with business needs. "The one thing we lack is computer people who understand the business," complains one senior manager. "Instead, they live in a technical world of their own." When a working partnership between these disparate management groups is achieved, the benefits become more obvious throughout the organization. This is shown by an analysis of the level of success with information technology achieved by the companies in the survey—broken down into very successful, fairly successful, and unsuccessful categories.

The study clearly showed that IS is now the very fabric of a successful business in all market sectors. Only the highest level of success with information technology will, therefore, be good enough for companies aiming to be among tomorrow's leaders.


IMPORTANCE of MAIN PREREQUISITES for OBTAINING MAXIMUM BENEFITS FROM IS
To what extent do you think the issues listed below are important for your organization to obtain the most benefit from future information technology investments?
Ranked according to mentions of "very important" by percent.
Producing information technology plans which clearly contribute to strategic goals
To get management to participate in information technology planning and its implementation
Obtaining appropriate staff of high quality
Choosing the right technology and suppliers
Improving top and senior management understanding about information technology potential
Increasing management confidence that the information technology function will deliver worthwhile results
Improving the way in which information technology projects are implemented
Very successful organizations
Unsuccessful organizations
Source: Roger Tomlin & Co. Ltd.

sufficient time for projects, to provide the right resources, and to ensure that projects are implemented effectively.

The "Importance of Main Prerequisites for Obtaining Maximum Benefits from IS" section of the survey summarizes the differences between "very successful" and "unsuccessful" users in their assessments of what it takes for IS success. Obviously, less successful companies place more emphasis on improving what has gone wrong in the past through poor systems development, which affected management confidence. The main lesson, however, is that IS success depends on a combination of business management leadership and high-quality technical skills, blended into an effective corporate partnership.

Leadership from top management is crucial in giving purpose and direction. One relatively unsuccessful IS user, for example, comments, "I am amazed to hear other executives talking about business plans because I have never seen one that would allow me to deduce from it an IS plan."

Leadership usually begins with the vision of an individual or the board and leads to the positive role of IS in corporate strategic plans. But this will be successful only if it is followed through with well-planned policies and positive, coordinated actions. These must create a cultural attitude and infrastructure that encourages enterprise and commitment in exploiting information technology's benefits.

THE "QUANTUM LEAP" APPROACH IS DOOMED TO FAILURE.

IS must become a normal ingredient in every manager's portfolio of skills, and it must be fully integrated into normal business planning processes. To achieve this, a considerable investment of time and money has to be made in developing a systematic approach to the education of all managers and staff in appropriate levels of technological and business understanding.

There must also be a willingness to spend time developing detailed IS plans. This involves not only deciding what to do, but when it is most appropriate to take particular initiatives.

Successful Users Follow Similar Pattern

All the very successful users followed a similar evolutionary pattern of development. They began by focusing on internal cost savings, which are relatively easy to cost-justify. As management confidence in IS grows and computer specialists learn how to develop a flexible IS infrastructure, the focus gradually broadens to a more strategic emphasis.

Many unsuccessful users, however, are seeking to make a "quantum leap" into sudden success. The approach is doomed to failure.

Colin Palmer, deputy managing director of Thomson Holidays, London, emphasizes, "We succeeded in using IS to improve our competitive edge precisely because we avoided taking a quantum leap. The root of our success was that we were doing something incrementally, building on a firm foundation."

That is not just a foundation for IS success, but also one for business success in the future. It is this emerging culture of management partnerships identifying competitive applications that will create the business leaders in Europe during the 1990s. ■

Roger Tomlin is the head of London-based management consultants Roger Tomlin & Co. Ltd., which conducted the European survey on behalf of the Amdahl Executive Institute. During late 1987 and early 1988, 276 replies were received to a survey questionnaire distributed to IS managers in West Germany, France, Italy, the U.K., and Switzerland. The survey was followed up by group discussions at the London Business School with 25 IS executives. The Amdahl Executive Institute is at Dogmersfield Park, Hartley Witney, Hampshire RG27 8TE, England.